

Title (en)

Driving device capable of improving a shock and vibration resistance thereof

Title (de)

Ansteuerungsvorrichtung, befähigt zur Verbesserung des Stoß- und Vibrationswiderstands

Title (fr)

Dispositif de commande capable d'améliorer une résistance aux chocs et aux vibrations

Publication

**EP 1983585 A2 20081022 (EN)**

Application

**EP 08154485 A 20080414**

Priority

JP 2007107717 A 20070417

Abstract (en)

A driving device (20) includes an electro-mechanical transducer (441) having first and second end portions (441 a, 441 b) opposite to each other in an expansion/contraction direction, a static member (442) coupled to the first end portion of the electro-mechanical transducer, a vibration friction portion (443) coupled to the second end portion of the electro-mechanical transducer, and a rod-shaped moving portion (423) frictionally coupled to the vibration friction portion, whereby moving the moving portion (423) in the expansion/contraction direction of the electro-mechanical transducer. An outer sheath (30) is for covering the driving device (20). Attitude retaining means (443c, 321 a) retains an attitude of the driving device (20) with respect to the outer sheath (30).

IPC 8 full level

**H10N 30/00** (2023.01); **H10N 30/20** (2023.01); **G02B 7/10** (2006.01)

CPC (source: EP KR US)

**G02B 7/08** (2013.01 - EP KR US); **H02N 2/005** (2013.01 - EP KR US); **H02N 2/025** (2013.01 - EP KR US)

Citation (applicant)

- JP 2007107717 A 20070426 - NTN TOYO BEARING CO LTD
- JP 2633066 B2 19970723
- US 5225941 A 19930706 - SAITO SCHUICHIRO [JP], et al
- JP 3218851 B2 20011015
- US 5589723 A 19961231 - YOSHIDA RYUICHI [JP], et al
- JP 3180557 B2 20010625
- JP 2006054979 A 20060223 - FUJINON CORP
- JP H09191665 A 19970722 - MINOLTA CO LTD
- US 5890391 A 19990406 - OKADA HIROYUKI [JP]

Cited by

US11716035B2; WO2020152365A1

Designated contracting state (EPC)

AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MT NL NO PL PT RO SE SI SK TR

Designated extension state (EPC)

AL BA MK RS

DOCDB simple family (publication)

**EP 1983585 A2 20081022**; **EP 1983585 A3 20090930**; JP 2008289346 A 20081127; KR 20080093880 A 20081022; US 2008297000 A1 20081204; US 7652407 B2 20100126

DOCDB simple family (application)

**EP 08154485 A 20080414**; JP 2008107987 A 20080417; KR 20080033502 A 20080411; US 8294708 A 20080415